CLAIMS

We claim:

1. A system for regulating nutrient absorption and caloric intake, comprising:

an elongated tube having a stomach portion and a lower intestine portion, the elongated tube defining a passage to guide ingested material through the stomach and through a portion of the small intestine;

a non-invasive stomach stricture device having a positing member; and

wherein the positioning member positions the elongated tube within the stomach.

2. The system according to claim 1, wherein the non-invasive stomach stricture device further includes a clamping structure for regulating the rate of flow of ingested material through the elongated tube;

wherein the clamping structure alters the capacity of the portion of stomach through which the elongated tube passes.

3. The system according to claim 1, the elongated tube further comprising an inflatable member.

4. The system according to claim 1, wherein the clamping structure prevents the elongated tube from passing out of the stomach.

5. The system according to claim 1, wherein the positioning member positions the clamping structure on the stomach and relative to the elongated tube.

6. The system according to claim 1, wherein the clamping structure includes a front side member and a backside member, and a connector for coupling to the front side member and the backside member.

7. The system according to claim 1, wherein the positioning member is dimensioned to clamp the elongated tube through the stomach and reduce the capacity of the passage.

8. The system according to claim 1, wherein the elongated tube includes a collar designed to be clamped by the positioning member, the positioning member is dimensioned and positioned on the outside of the stomach to clamp the collar for suspending a portion of the elongated tube within the stomach.

9. The system according to claim 1, wherein the positioning member prevents the elongated tube from passing out of the stomach.

10. The system according to clam 1, wherein the non-invasive stomach stricture device includes a clamp adjusting mechanism.

11. The system according to claim 10, wherein the clamp adjusting mechanism includes an actuator for operating the clamp adjusting mechanism.

12. A system for regulating nutrient absorption and caloric intake, comprising:

an elongated tube having a stomach portion and a lower intestine portion, the elongated tube defining a passage to guide ingested material through the stomach and through a portion of the small intestine;

a non-invasive stomach stricture device having a clamping structure; and

wherein the clamping structure prevents the elongated tube from exiting the stomach.

13. The system according to claim 12, wherein the non-invasive stomach stricture device includes a positioning member for positioning the elongated tube within the stomach.

14. The system according to claim 12, wherein the arrangement of the clamping structure regulates the rate of flow of ingested material through the elongated tube.

15. The system according to claim 12, wherein the arrangement of the clamping structure alters the capacity of the portion of stomach through which the elongated tube passes.

16. The system according to claim 12, the elongated tube further comprising an inflatable member.

17. The system according to claim 12, wherein the clamping structure includes a front side member, a backside member, and a connector for coupling to the front side member and the backside member.

18. The system according to claim 17, wherein the front side member, the backside member, and the connector are integral.

19. The system according to claim 12, wherein the elongated tube includes a collar designed to be clamped by the positioning member, the positioning member is dimensioned to clamp the collar for suspending a portion of the elongated tube within the stomach.

20. The system according to clam 12, wherein the non-invasive stomach stricture device includes a clamp adjusting mechanism.

21. The system according to claim 20, wherein the clamp adjusting mechanism includes an actuator for operating the clamp adjusting mechanism.

22. A non-invasive stomach stricture device, comprising:

a front side member;

a backside member;

a connector for coupling the front side member to the backside member to form a clamp, wherein the clamp is designed to clamp a stomach.

23. The device according to claim 22, wherein the clamp is designed to have a size and shape suitable for fitting adjacent to the trachea side of the upper quadrant of a stomach for regulating nutrient absorption and caloric intake by reducing the capacity of the stomach.

24. The device according to claim 22, wherein the backside member and the front side

member include stomach contacting surfaces, the stomach contacting surfaces being free of piercing projections.

25 The device according to claim 24, wherein at least one of the stomach contacting surfaces include structure for permitting fluid flow.

26. The device according to claim 22, further comprising:

a positioning member for coupling to the front side member and the backside member to form a clamping assembly.

27. The device according to claim 22, wherein the front side member, connector, and backside member are integral.

28. The device according to claim 22, wherein the backside member and the connector are integral.

29. The device according to claim 22, wherein the connector comprises a slot adapted to receive the front side member so that the front side member can be coupled to the backside member to form a clamp.

30. The device according to claim 26, wherein the backside member and the front side member each comprise an anchoring slot, each anchoring slot adapted to receive an end of the positioning member.

31. The device according to claim 30, wherein each slot and the positioning member include corresponding engagement structure for coupling the positioning member to the front side member and the backside member.

32. The device according to claim 22, wherein the front side member and the backside member include an aperture through which the front side member and the backside member can be sutured to the stomach.

33. A non-invasive stomach stricture device, comprising:

a front side member;

a backside member;

a connector connecting the front side member to the backside member, the connector dimensioned to space the front side member from the backside member such that the device can be positioned over the stomach of a patient with the front side member over a front side of the stomach and the backside member positioned over the backside of the stomach, and the stomach will be constricted between the front side member and the backside member.

34. The device according to claim 33, wherein the connector and the backside member are integral.

35. The device according to claim 33, wherein the connector determines the distance between the front side member and the backside member.

36. The device according to claim 33, further comprising a positioning member for positioning the stomach stricture device on the stomach of a patient.

37. The device according to claim 36, wherein the positioning member couples to a portion of the front side member and to a portion of the backside member.

38. The device according to claim 36, wherein the positioning member is adjustable relative to the front side member and the backside member.

39. The device according to claim 37, wherein the backside member and the front side member each comprise an anchoring slot for receiving an end of the positioning member.

40. The device according to claim 39, wherein the positioning member comprises engagement structure for connecting with at least one corresponding engagement structure in at least one of the front side member and the backside member.

41. The device according to claim 33, wherein the front side member is separable from the backside member for allowing the device to be removed from a patient.

42. The device according to claim 33, wherein the device is dimensioned for positioning adjacent to the trachea side of the upper quadrant of a human stomach to limit the rate of flow of ingested material into the stomach and to limit the digestion and absorption of the ingested material.

43. The device according to claim 33, wherein the device is dimensioned for positioning adjacent to the upper quadrant of a human stomach, substantially perpendicular to the esophagus, to limit the rate of flow of ingested material into the stomach and to limit the digestion and absorption of the ingested material.

44. A method for implanting a non-invasive stomach stricture device, comprising the steps of:

providing a non-invasive stomach stricture device having a front side member, a backside member, and a connector for coupling the front side member to the backside member to form a clamp, wherein the clamp is designed to clamp a stomach;

coupling the backside member to the connector;

positioning the backside member, coupled to the connector, adjacent to the trachea side of the upper quadrant of the human stomach; and

coupling the front side member to the connector to form a clamp which constricts the stomach to limit the rate of flow of ingested material into the stomach and to limit the amount of usable inside surface area of the stomach.

45. The method according to claim 44, wherein the step of placing the backside member adjacent to the trachea side of the upper quadrant of the human stomach comprises excising a canal through fatty tissue on the backside of the stomach.

46. The method according to claim 44, further comprising the step of connecting a connector

to the front side member and the backside member.

47. A device for regulating nutrient absorption and caloric intake, comprising:

an elongated tube having a stomach portion and a lower intestine portion, the elongated tube defining a passage to guide ingested material through the stomach and through a portion of the small intestine; and

an anchoring structure for anchoring the elongated tube to adjacent tissue.

48. The device according to claim 47, wherein the stomach portion includes an esophageal portion for positioning substantially at the region where the esophagus meets the stomach, the esophageal portion including the anchoring structure.

49. The device according to claim 47, wherein the anchoring structure includes at least one of a cardiac orifice structure for anchoring a portion of the elongated tube to the cardiac orifice, a collar, a web, a and reinforced portion.

50. The device according to claim 47, further comprising anchoring structure at the lower intestine portion for anchoring the lower intestine portion to adjacent tissue of the patient.

51. The device according to claim 50, wherein the anchoring structure includes at least one of a collar, a web, and a reinforced portion.

52. The device according to claim 47, wherein the stomach portion includes at least one opening.

53. The device according to claim 47, further comprising structure for positioning the tube in the stomach of a patient.

54. The device according to claim 53, wherein the positioning structure comprises at least one inflation member.

55. The device according to claim 46, further comprising a plurality of inlet openings located substantially at the region between the stomach portion and the lower intestine portion.

56. The device according to claim 55, wherein the inlet openings are elongated slots.

57. The device according to claim 46, further comprising a plurality of exit openings located substantially at the region between anchoring structure an the stomach portion.

58. A method for regulating nutrient absorption and caloric intake, comprising the steps of:

providing a device for regulating nutrient absorption and caloric intake having an elongated tube with a stomach portion and a lower intestine portion, the elongated tube defining a passage to guide ingested material through the stomach and through a portion of the small intestine, and an anchoring structure at the stomach portion for anchoring the elongated tube before the elongated tube enters the stomach;

positioning the device in a patient with the stomach portion substantially in the stomach of the patient and the lower intestine portion substantially in the lower intestine of the patient;

securing the device in position in the patient;

whereby a portion of the ingested material will pass through the passage without being digested by the patient.

59. The method of claim 58, further comprising the step of adjusting the length of the lower intestine portion, wherein a longer length prevents absorption of ingested material through the lower intestine.

60. The method of claim 58, further comprising the step of providing inflation members secured to the stomach portion, and filling the inflation members after the stomach portion has been positioned in the stomach of the patient.

61. The method of claim 58, further comprising the step of securing the lower intestine portion to the lower intestine of the patient.

62. A method of regulating nutrient absorption and caloric intake, comprising the steps of:
non-invasively reducing the capacity of the stomach; and
limiting the interaction of digestive agents with ingested substances.

63. The method of claim 62, wherein reducing the capacity of the stomach includes clamping a portion of the stomach.

64. The method of claim 63, further comprising the step of selectively adjusting the clamping force.

65. The method of claim 62, wherein the limiting step includes funneling ingested material through a portion of the digestive system.